

Joe Brennan

PHD CANDIDATE

Dynamics of Ecological and Evolutionary Processes lab of the University of California, Davis

☎ He/Him | ✉ jlbrennan@ucdavis.edu | ☎ 0009-0006-4178-9919 | 📱 biologyjoe87 | 🌐 mathecol-joe-brennan

I am interested in the ecological and evolutionary mechanisms of coexistence, community assembly, and community disassembly using mathematical and computational models.

Research Interests

- Bioinformatically exploring the world of big, public data in new and interesting ways.
- Combining scientific domains to create a pleasant end-user experience.
- I have overcome many obstacles to be where I am today and I am just happy to be here.

Education

Doctor of Philosophy

UNIVERSITY OF CALIFORNIA, DAVIS

California, USA

2020 - Present

- Biochemistry, Molecular, Cellular, and Developmental Biology Graduate Group
- Space

Bachelors of Arts & Science

CONCORDIA UNIVERSITY, ST. PAUL

Minnesota, USA

2014 - 2018

- Biology, BS
- Chemistry, BA
- Honors in Research
- Minor in Mathematics
- Magna Cum Laude

Associate of Applied Science in Automotive Mechanics

HENNEPIN TECHNICAL COLLEGE

Minnesota, USA

2008 - 2010

- Academic Excellence

Research Experience

Graduate Research

UNIVERSITY OF CALIFORNIA, DAVIS

Davis - California

2020 - Present

- Pangenomic and novel database curation for the sourmash software ecosystem
- Case vs control multiomic investigation of public data
- Image analysis and quantification pipeline for ectodermal derivatives specified in early development
- Professors for the Future (PFTF) Fellow
- NIH Molecular Cell Biology T32 Fellowship Affiliate
- NIH Initiative for Maximizing Student Development (IMSD) Affiliate

Junior Research Specialist

UNIVERSITY OF CALIFORNIA, DAVIS

Davis - California

2019 - 2020

- Molecular evolution of thermal tolerance in coral
- Knot theory topology of dsDNA in bacteriophage DNA packaging

Undergraduate Research

CONCORDIA UNIVERSITY, ST. PAUL

St. Paul - Minnesota

2017 - 2019

- Novel artificial culture vessel for shell-less chick development

Tutor

CONCORDIA UNIVERSITY, ST. PAUL

St. Paul - Minnesota

2016 - 2018

- In subjects of Calculus, Physics, Chemistry, and Biology

Professional Service

Scholarly Literature Workshop Author and Lead instructor

DATALAB

University of California, Davis

2024 - Present

Gene Regulatory Networks for Development Teaching Assistant

MARINE BIOLOGY LABORATORY

University of Chicago

- 2024

Admissions Committee Member

PREP@UCD

University of California, Davis

2023 - Present

Recruitment Colloquium Mentor

BMADB GRADUATE GROUP

University of California, Davis

2020 - 2024

Biology Graduate Admissions Pathways Mentor

BioGAP

University of California, Davis

2020 - 2021

NSF GRFP Grant Writing Working Group Creator and Lead Instructor

ROGERS LAB

University of California, Davis

2020 - 2021

Community Involvement

AISES Rocketry Team Founding Co-Mentor

LETT'S LAB

University of California, Davis

2021 - 2023

Grad & Post Doc UCD SACNAS Chapter Founding Board Member

COLLEGE OF BIOLOGICAL SCIENCES

University of California, Davis

2020 - 2021

Young Scientist Program Volunteer

COLLEGE OF BIOLOGICAL SCIENCES

University of California, Davis

2019 - 2020

3D Printing Club Founder and President

MATH AND BIOLOGY DEPARTMENT

Concordia University, St. Paul

2017 - 2018

Sexual Assault Victim Advocate

UNITED STATES AIR FORCE

Joint Base McGuire Dix Lakehurst

2012 - 2014

Flight line Training Leader

UNITED STATES AIR FORCE

Joint Base McGuire Dix Lakehurst

2012 - 2014

Physical Training Leader

UNITED STATES AIR FORCE

Joint Base McGuire Dix Lakehurst

2011 - 2014

Leadership Mentor

UNITED STATES AIR FORCE

Sheppard Air Force Base

2010 - 2011

Treasurer

STUDENT GOVERNMENT

Hennepin Technical College

2009 - 2010

SkillsUSA participant

AUTOMOTIVE DEPARTMENT

Hennepin Technical College

2009 - 2010

Funding and Grants

Graduate Research Fellowship Program (GRFP)

NATIONAL SCIENCE FOUNDATION

University of California, Davis

2021 - 2024

Undergraduate Preparation Fellowship (UPF)

NATIONAL INSTITUTE OF HEALTH

University of California, Davis

2020 - 2021

Postbaccalaureate Research Education Program (PREP)

NATIONAL INSTITUTE OF HEALTH

University of California, Davis

2019 - 2020

Post 9/11 GI Bill

US DEPARTMENT OF VETERAN AFFAIRS

Concordia University, St. Paul

2014 - 2018

Federal Pell Grant

US DEPARTMENT OF EDUCATION

Hennepin Technical College

2008 - 2010

Honors and Awards

Professors for the Future

A COMPETITIVE, LEADERSHIP-DEVELOPMENT PROGRAM

University of California, Davis

May 2024

College of Biological Science's Dean's Mentorship Award

IN RECOGNITION OF GRADUATE STUDENTS WHO HAVE EXCELLED IN THE MENTORSHIP OF UNDERGRADUATE STUDENTS

University of California, Davis

May 2022

NSF Graduate Research Fellowship Program (GRFP) Award

University of California, Davis

March 2020

NIH Undergraduate Preparation Fellowship (UPF) Award

University of California, Davis

March 2020

NIH Postbaccalaureate Research Education Program (PREP) Award

University of California, Davis

May 2019

Honors in Research

Concordia University, St. Paul

Decemeber 2018

Paul W. Stor Biology Award

FOR EXCELLENCE AND DEDICATION TO UNDERGRADUATE BIOLOGICAL SCIENCES

Concordia University, St. Paul

May 2018

Dean's List

Concordia University, St. Paul

2014 - 2018

Airman of the Quarter

ACKNOWLEDGMENT OF EXCELLENCE WHILE SERVING IN THE UNITED STATES AIR FORCE

Joint Base McGuire Dix Lakehurst

January 2013

Academic Excellence

Hennepin Technical College

May 2010

Skills

Programming Languages

BASH, R, JAVASCRIPT, PYTHON, SQL

Markup Languages

CSS, HTML, LATEX, MARKDOWN, RMARKDOWN

Other Languages

SnakeMake

Version Control

Git/GitHub

Text Editors

RStudio, Vim/Neovim

Health

Self-Aid Buddy Care (SABC), CPR Trained, AED Certified

Safety

Self-Defense Coordinator, Sexual Assault Victim Advocate (SAVA)

Mechanics

FCC GROL, Certified Aircraft Mechanic, Certified Automotive Mechanic

Presentations

<p>The Modern, Practical Scholar Workshop Series</p> <p>An accessible, expanding, perpetual, and continuously updating workshop series focused on training scholars of all career stages in applied technology to streamline and improve their overall scholarship techniques</p>	<p>University of California, Davis</p> <p>2023-2025</p>
<p>My Successes and Failures of Grad School: How to Think like a Scientist</p> <p>A discussion to students about who can become a scientist</p>	<p>University of California, Davis</p> <p>June 2024</p>
<p>My Successes and Failures of Grad School: How to Think like a Scientist</p> <p>A discussion to students about who can become a scientist</p>	<p>Concordia University, St. Paul</p> <p>September 2023</p>
<p>Thoughts on academic writing: Emphasis on the GRFP</p> <p>A lecture on writing the NSF GRFP to IMSD students</p>	<p>University of California, Davis</p> <p>October 2022-24</p>
<p>Relocation and the meaning of life</p> <p>A lecture to prep on personal tips on moving across country for academia</p>	<p>University of California, Davis</p> <p>May 2022</p>
<p>Student Funding Panel</p> <p>A discussion to recruits about graduate student grants and funds</p>	<p>University of California, Davis</p> <p>February 2022</p>
<p>Diversity, Equity, Inclusion Committee (DEIC) Gap Year Seminar</p> <p>A discussion to students on the impact of taking a gap year</p>	<p>University of California, Davis</p> <p>March 2021</p>
<p>Diversity and Life Panel</p> <p>A discussion to recruits on life experience in graduate school</p>	<p>University of California, Davis</p> <p>March 2021</p>
<p>Fractal, Hausdorff, and the Euclidean Dimension</p> <p>A capstone presentation on independent mathematics research</p>	<p>Concordia University, St. Paul</p> <p>December 2018</p>
<p>Mandelbrot and Julia, an Imaginary Relationship</p> <p>A capstone presentation on independent mathematics research</p>	<p>Concordia University, St. Paul</p> <p>December 2018</p>
<p>Perserverance in Research</p> <p>A capstone presentation on independent biology research</p>	<p>Concordia University, St. Paul</p> <p>November 2018</p>
<p>How to count the Cantor set... You Cant?!</p> <p>A presentation to the mathematics club, Sigma Pi</p>	<p>Concordia University, St. Paul</p> <p>November 2018</p>

3D Printed Koch Snowflake Fractals

A PRESENTATION TO THE MATHEMATICS CLUB, SIGMA PI

Concordia University, St. Paul

April 2018

Science Department Research Symposium

AN UPDATE ON CURRENT STATE OF UNDERGRADUATE RESEARCH

Concordia University, St. Paul

2017, 2018